



INTERNATIONAL SOCIETY FOR CONCRETE PAVEMENTS

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ORGANIZATIONAL MEMBERS: & MAJOR EVENT SPONSORS:



WHAT'S NEW AT ISCP



ISCP Welcomes Sponsors for the 10th International Conference on Concrete Paving, Québec, Canada

The International Society for Concrete Pavements (ISCP) and Tim Smith, Conference Chair, welcome sponsors for the 10th International Conference on Concrete Pavements (10th ICCP), to be held July 8-12, 2012 in Québec City, Québec, Canada. Sponsors are invited to participate and are offered four (4) levels of sponsorship: Gold, Silver, Bronze and Platinum. For details on Sponsorship Opportunities and the Conference, please view the article on page 3 of this newsletter and visit the Conference website at: <http://www.concretepavements.org/10thiccp/index.htm>.

Confirmed Sponsors:

Canadian Airfield Pavement Technical Group: Bronze
Manitoba Infrastructure and Transportation: Bronze
Cement Association of Canada: Silver
Ontario Ministry of Transportation: Gold

Collaborators

Transports Québec
EUPAVE
FHWA
CP Tech Center
TRB



Ontario
MINISTRY OF
TRANSPORTATION



Cement
Association
of Canada

Association
Canadienne
du Ciment



Deadline For 10th ICCP Papers Extended to September

Although the deadline for submission of abstracts for the 10th International Conference has passed, the Editorial Committee will still consider submitted papers. The extended deadline is September 30, 2011.

For submission of papers please click on: <https://www.softconf.com/c/10thiccp/>.

INDUSTRY NEWS

AIRPORT PAVING: Flying High: "Ballenger Brings Concrete Overlay Strategies to Light at South Carolina, USA, Airport"

Construction crews would overlay an existing asphalt runway, which was in direct need of repairs, with 9 in. of concrete. Greg Dean, the *Airport Programs Director for the American Concrete Pavement Association (ACPA) Southeast*, stated: "Since the original runway was made of asphalt, alternative bids would not have been considered a few years ago. But the current economic climate changed all that. ...now you've got some different thinking out there that makes it advantageous to bring concrete overlay strategies to light..."

To view the entire article, please click on: [AIRPORT PAVING: Flying high](http://www.roadbridges.com:80/articles/20_S.C.%20Airport_0411RB.pdf)
For a PDF Format, please click on:
http://www.roadbridges.com:80/articles/20_S.C.%20Airport_0411RB.pdf



Serving the Transportation Construction Industry for Over 100 Years

Article by Todd Loesch, Source: Roads & Bridges
April 2011, Volume: 49, Number: 4 ©2011 Scranton Gillette Communications



TECHNOLOGY DEVELOPMENTS

"CP ROAD MAP" E-News: Moving Advancements into Practice (MAP) Brief

The CP Road Map E-News is the newsletter of the official title *Long-Term Plan for Concrete Pavement Research and Technology (CP Road Map)*: a national research plan developed and jointly implemented by the concrete pavement stakeholder community. *Moving Advancements into Practice (MAP) Briefs* describe promising research and technologies that can be used now to enhance concrete paving practices. *What is the CP Road Map?* It is a (continued)



... Concrete Industry Experienced More Changes in Last 15 Years than Previous 90 Today's new materials, construction equipment & ... require more dynamic solutions.

10-year innovative, strategic plan developed by more than 400 people in the concrete industry (published late 2005) outlining approximately \$250 million in needed concrete pavement research. **Why a Road Map?** The concrete pavement industry has experienced more changes during the last 15 years than in the previous 90. Today's new materials, construction equipment and methods, project requirements and customer expectations require more dynamic solutions. Research outlined in the CP Road Map is proactively reinventing concrete pavement systems to deliver 21st century results. The goal: A comprehensive, integrated and fully-functional system of concrete pavement technologies.

IN THIS ISSUE: Moving Advancements into Practice (MAP) Brief

...use of fly ash as a supplementary cementitious material in concrete mixtures. ([Read on](#))

News from the Road

- FHWA published a TechBrief that focuses on the sustainability of blended and performance cements. ([Read on](#))
- Ill. DOT design charts on mechanistic-empirical design for continuously reinforced concrete pavements. ([Read on](#))
- The FAA published a report on identification of materials-related distress in airfield concrete pavements. ([Read on](#))
- Research at Baylor Univ. explored microwave sensors for measuring w/cm ratio in concrete mixtures. ([Read on...](#))
- The National Institute of Standards Technology (NIST) Building for Environmental and Economic Sustainability (BEES) analysis tool is now available online. ([Read on...](#))

Updates from the States: Iowa Addressing research needs outlined by the CP Road Map. ([Read on...](#))

For the NEW e-News from CP Road MAP, click on: [e-news homepage](#). PDF: [Download MAP Brief 1-3](#).

To visit the CP Road MAP Website, click on: <http://www.cproadmap.org/index.cfm>.

If you'd like to find out more about the CP Road Map or learn how you can get involved, please contact Program Manager Dale Harrington at: dharrington@snyder-associates.com or 515-964-2020.



~ Sabrina R Shields [ITRNS]

RMC Research & Education Foundation Releases New Study of Pervious Concrete in Cold Weather

Silver Spring, MD, USA, March 1, 2011: The Ready Mixed Concrete (RMC) Research & Education Foundation is proud

RMC Research & Education Foundation

to announce the release of the latest addition to its extensive pervious concrete library of offerings: Performance Evaluation of In-Service Pervious Concrete Pavements in Cold Weather. The research, completed at the University of Minnesota, was performed in cooperation with the Minnesota Department of Transportation (MnDOT) and their Pavement Testing Facility MnROAD. It includes a comprehensive evaluation of the use of pervious concrete in cold weather. The study examined issues such as:

- Impermeability Causes
- Mix Design
- A Rheology study
- Pavement Structural Analysis

The researchers reviewed previous pervious concrete studies and made recommendations for future areas of research on the topic.

Foundation Chairman Scott W. Parson, President of Oldcastle Materials Mountain West Division said, "Pervious concrete pavements continue to grow in popularity, not only for their tremendous stormwater management properties, but the numerous other benefits offered. The Foundation funded additional research on the use of pervious concrete to better understand how it may be improved and its use expanded, especially given the growing global emphasis on the need for sustainable construction."

Foundation Executive Director Julie Garbini noted, "This project is another great example of how the Foundation is advancing the concrete industry through partnering with universities and governmental agencies. Although pervious concrete has been around for years, with each new research project, we continue to learn more and more about this beneficial pavement."

The Vision of the RMC Research & Education Foundation is to support research and educational programs that will increase professionalism and quality in the concrete industry. The new pervious concrete study is available for download from the Foundation's website at: www.rmc-foundation.org. The Foundation's Research Supporting Sustainable Development CD or a hardcopy are also available. For further information, please contact Jennifer LeFevre by phone or e-mail at: 240-485-1151 jlefevre@rmc-foundation.org.

~ Mary Vancura, Graduate Assistant, University of Minnesota Department of Civil Engineering

CONFERENCE NEWS & UPDATES

ASCP Hosts Its First Concrete Pavements Conference in Sydney, Australia this August



Australian Society for Concrete Pavements

The Australian Society for Concrete Pavements (ASCP) will hold its first Concrete Pavements Conference in Sydney, Australia on Tuesday, August 2, 2011. This Conference will focus on Concrete Road Pavements. ASCP National President, Mark Hoskins stated, "This Conference represents a significant development for ASCP, which initiated operations only three years ago. In

that time, ASCP has conducted at least four forums each year, facilitated specification reviews for both road and industrial pavements, established a Branch in Queensland and engaged in training for the concrete road pavement industry. In 2011 we plan to establish a Branch in Victoria and to be able to offer training for operatives in concrete road paving." The August Conference will focus on concrete road pavements, and will be addressed by many of the Directors of the International Society for Concrete Pavements (ISCP) who are world-known experts.

The Conference topics are grouped into four pavement categories:

- Design
- Materials
- Sustainability
- Performance



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Opportunities are available for Consultants, Contractors & Materials Suppliers to Sponsor as well as to Exhibit.

"This Conference provides a unique opportunity for Australian concrete road pavement practitioners to gather in one location to receive current information from around the world. We are also delighted to host the ISCP Board meeting in Australia where they will be available to address our members," Hoskins said.



The Conference sessions will be followed by a dinner which will be addressed by the ISCP President, Mark Snyder, and EUPAVE Managing Director, Luc Rens, who will provide details of Concrete Road Pavement activities throughout Europe. Mark Snyder commented, "ISCP is delighted to accept the invitation of ASCP to come to Australia for its Board meeting and their inaugural Conference. This is the first time the ISCP Board has met in the Pacific region. Since ASCP was established in 2008, we have enjoyed close relations with them, culminating in a Memorandum of Understanding between ISCP and ASCP in August 2009."



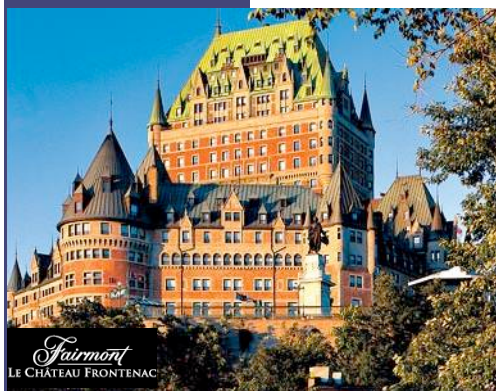
Registrations for the Conference are now open, with substantial early registration fee discounts being offered. All details can be found on the ASCP website: www.concretepavements.com.au or <http://www.concretepavements.com.au/Events/Events.aspx>

Opportunities are available for consultants, contractors and material suppliers to sponsor as well as exhibit. For more information, please contact Kevin Abrams at: exec@concretepavements.com.au.

Reserve Your Room to Ensure Your Stay at Québec's Historic Hotel During the 10th International Conference on Concrete Pavements (10th ICCP):

The International Society for Concrete Pavements (ISCP) is pleased to provide you with the latest information on the 10th International Conference on Concrete Pavements (10th ICCP), to be held in Québec City, Québec, Canada July 8-12, 2012. The theme is: **Sustainable Solutions to Global Transportation Needs**. For a printable flyer on the conference, please click on: [10th ICCP Conference Flyer](#).

Tim Smith, Chairman of the 10th ICCP Conference reports, "Over 130 abstracts have been received and are being reviewed for acceptance. A list of the general topics will be developed based on the abstracts received and approved. Over seventy (70) people have their hotel reservations at the conference hotel - [Fairmont Le Château Frontenac](#). Only 29 rooms at the government rate and approximately 150 rooms at the general rate remain available. Please note that this is the peak tourist season and many of the better area hotels will probably be full during the conference time, so advance registration is highly recommended. Join the [Fairmont President's Club](#) BEFORE making your hotel reservation to get FREE INTERNET SERVICE at the hotel. Any ISCP members interested in attending the conference are encouraged to reserve their rooms as soon as possible for the discounted conference rates.



The conference registration rate structure is set as follows:

Category	Early March 31	Regular June 30	On-site
General Delegates	\$850	\$950	\$1050
Continuing Members*	\$700	\$800	\$ 900
Government Employee	\$100 off of above rates (i.e.: \$750 Early General Delegate Gov't Employee, \$600 Early Continuing Member Gov't Employee)		
Student:	1/2 General Delegate rates		
Exhibitors:	\$2500/booth (includes 1 registration; additional registrations at rates above)		
Spouses/Guests:	\$250 (includes 2 receptions, 1 banquet & access to spouse/guest hospitality room)		

*Continuing Member rates are for 2011 ISCP Members that continue through 2012 or New 2012 members who prepay Continuing Membership dues through 2013. New non-prepaid 2012 Members pay General Delegate rates.

Passkey, has been established and reservations can be completed as follows:

1) For the **Government Rate** (available only for the dates July 7-11, 2012 inclusive), please make reservations by clicking on: <https://resweb.passkey.com/go/10inthlconference>

2) For the **non-government rate**, please make reservations by clicking on: <https://resweb.passkey.com/go/cac2012>.

3) For **Reservations by phone**, please contact the Château Frontenac Global Reservations Center at: **1-800-441-1414**. Identify yourself as being with part of the conference by mentioning the following reservations ID: [ICCP0712](#) for Government employees & [CACAO9](#) for all others. For the Hotel Reservations information, please click on: <http://www.concretepavements.org/10thiccp/accomodations.htm>.

Collaborators:



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ISCP Co-Sponsors Successful China Conference



An International Conference on Concrete Pavement Design, Construction and Rehabilitation was held in Xi'an, China on April 19-20, 2011. This event, organized by Chang'an University in collaboration with ISCP and the Engineering Research Center of Pavement Materials in the Chinese Ministry of Education, was held on the campus of Chang'an University in conjunction with the University's 60th Anniversary celebration.

ISCP members figured prominently in the conference, not only by writing and delivering papers for the event, but also by reviewing papers and assisting with organizational aspects of the conference. ISCP Honorary Member Ernest Barenberg (Professor Emeritus, University of Illinois, USA) was the keynote speaker for the conference. He delivered a fine and timely presentation and paper entitled "How to Design and Construct High-Quality, Long-Life Concrete Pavements."



ISCP President Mark Snyder co-chaired the Conference. Presentations were made by many other ISCP members, including Andre Molenaar, Bryan Perrie, Neeraj Buch, Anna-Carin Brink, Julie Vandenbossche and Bo Tian. The conference organizers would like to thank all of the ISCP members who reviewed papers for this conference and assisted with the organization of the event.



Speakers and Organizers of the Chinese International Conference on Concrete Pavements

CD copies of conference proceedings can be obtained for a nominal fee through the ISCP secretary at: secretary@concretepavements.org.



NCC Spring Meeting themed "Accelerated Construction"

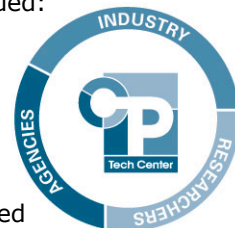
National Concrete Pavement Technology Center



"Accelerated Construction" was the theme for the National Concrete Consortium (NCC) Spring meeting held April 26-28, 2011 in Indianapolis, Indiana, USA. The meeting was organized by the National Concrete Pavement Technology (CP Tech) Center and State Departments of Transportation (DOTs). Nearly 100 concrete pavement construction experts from state DOTs across the

United States, as well as FHWA, ACPA Chapters, academia, industry and suppliers participated in presentations and discussions. Additional presentations and interactive discussions included:

- Concerns about joint deterioration
- Air system requirements for modern concrete mixes
- Future research needs
- Training modules under development
- The concept of creating a national laboratory
- A draft guide to dowel systems for jointed concrete pavements.



Each state and the FHWA summarized their QC/QA requirements and practices related to concrete paving. The field tours included a visit to the I-70/465 construction site and to Purdue University's Concrete Laboratories. The agenda, minutes and some of the presentations are available at: http://www.cptechcenter.org/t2/ttcc_ncc_meeting.cfm.



THESIS ABSTRACT

"Moisture Transport in Cement Based Materials: Application to Transport Tests and Internal Curing"

Javier Castro, Ph.D., Purdue University, March 2011.

Moisture Transport in Cement Based Materials: Application to Transport Tests and Internal Curing.

Major Professor: Jason Weiss.

The durability of concrete subjected to aggressive environments depends largely on the transport properties of the concrete. These transport properties are influenced by the volume of pores as well as the connectivity of the pore network. Three main mechanisms can be used to describe transport in cementitious systems: permeability, diffusion and absorption. Permeability is the measure of the flow of water under a pressure gradient. Diffusion is the movement of ions due to a concentration gradient. Absorption can be described as the ability to take in water by means of capillary suction. It is important to note that absorption occurs on a much faster time scale than diffusion.

A large fraction of concrete in service is only partly saturated and the initial ingress of fluid is influenced, at least in part, by capillary absorption. As such, fluid (water) absorption has been used as an important factor for quantifying the durability of cementitious systems and it is being increasingly used by specifiers and in forensic studies to provide a parameter that can describe an aspect of concrete durability. For this reason the water absorption test is the focus of the first part of this thesis. The influence of precondition-

IOWA STATE UNIVERSITY
The National Concrete Pavement Technology Center (National CP Center) at Iowa State University is a national hub for concrete pavement research and technology transfer.

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ing and initial moisture content was assessed as it relates to the water absorption test measurements. The results confirm that the test is considerably affected by the relative humidity of the samples before starting the test, which if not properly accounted for can lead to a misunderstanding of the actual absorption behavior. It was also observed that the conditioning procedure described in ASTM C1585 is not able to eliminate the "moisture history" of the samples. As such modifications to the standard test procedure are suggested. Further, the absorption behavior was investigated when salts were present in the samples or as a part of the absorbing fluid. Tests were performed on concrete using different aqueous solutions containing deicing salts. The rate of fluid absorption was generally lower for aqueous solutions containing deicing salts than it was for water (with the exception of low concentrations of NaCl). The change in the rate of aqueous fluid absorption was proportional to the square root of the ratio of surface tension and viscosity of the absorbed fluid. Experimental data indicates that concretes that had previously been exposed to deicing solutions can also exhibit reduced rate of absorption, even if water is the fluid being absorbed.

The second part of this thesis is focused on the internal curing for concrete and its effect on the transport properties. The increased propensity for shrinkage cracking in low water-to-cement ratio (w/c) concrete has inspired the development of new technologies that can reduce the risk of early-age cracking. One of these is internal curing. Internal curing uses pre-wetted lightweight aggregate (LWA) to supply "curing water" to low w/c paste as it hydrates. Significant research has been performed to determine the effects of internal curing on shrinkage and stress development; however, relatively little detailed information exists about the effects of internal curing on fluid transport properties such as water absorption. In order to determine the mixture proportions for internally cured concretes information about the water absorption and water desorption properties of the lightweight aggregate is needed. Unfortunately, these properties are not easy to obtain accurately. This work studies the absorption and desorption properties of commercially available expanded shale, clay and slate lightweight aggregates. This research determines these properties so that they can be efficiently used in proportioning concrete for internal curing. Further, it was shown that by normalizing the results general trends on material behavior can be obtained that are quite useful in proportioning the mixtures. After characterizing the properties of the aggregates to be used for internal curing, this research examines the absorption of water into low w/c mortar specimens made with pre-wetted lightweight aggregates. These results indicate that the inclusion of LWA can reduce the water absorption of mortar specimens. This observation was reinforced with electrical conductivity measurements that exhibited similar reductions. In addition, this work analyzes the potential use of internal curing in concrete systems with w/c higher than normally used (w/c of 0.30, 0.36, 0.42 and 0.45) to increase the durability of the concrete. Test results show that internal curing can be useful to improve the durability of concretes prepared with this wider range of w/c. The benefits of using internal curing on the transport properties can be explained by an increase in the hydration of the cement. This was assessed using isothermal calorimeter, internal relative humidity, scanning electron microscopy and an atomic force microscopy. Further, in addition to reducing the porosity, the increased hydration appears to reduce the tortuosity by preferentially hydrating the interfacial regions around the lightweight aggregate.

PAVEMENT INDUSTRY HONORS

ASCE Honors Professor Monismith and Establishes A Lecture in his Name



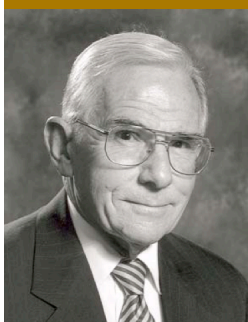
The Geo-Institute (G-I) of the American Society for Civil Engineering is establishing a Lecture in recognition of Professor Carl L. Monismith and his contribution to the Pavement Engineering area. The Monismith Lecture has been established to honor the "Father of the Pavement Profession" by annually recognizing the contributions of one of our peers, as the Terzaghi Lecture was instituted in 1960.

Professor Monismith's teaching and research career in pavement technology at the University of California, Berkeley spans more than 50 years. Throughout this period he has mentored numerous graduate students that have disseminated pavement technology world-wide. Professor Monismith has published extensively in the areas of pavement design and rehabilitation as well as pavement management. He has been an active contributor to the Transportation Research Board (TRB), the American Society of Civil Engineers (ASCE) and many other organizations. His contributions have been recognized with a number of awards, including: TRB's *K. B. Woods Award*, *First Distinguished Lectureship Award* and the *Roy W. Crum Distinguished Service Award*. He is a Fellow of the American Association for the Advancement of Science, a member of the American Society for Testing and Materials (ASTM), an honorary member of ASCE and is a member of the U.S. National Academy of Engineering (NAE).

The C.L. Monismith Lecture will be awarded annually for outstanding research contributions in Pavement Engineering. Nominations will be considered from any Geo-Institute, ASCE member or ASCE technical committee. The selection of the Lecturer will be made by the Awards Committee of the G-I and approved by the G-I Board of Governors. The Lecturer will be presented with a plaque and an honorarium to offset travel costs, as allowed by the funds endowed for this purpose. The Lecturer will be encouraged to submit a paper (for publication by ASCE) to accompany his/her lecture and to be labeled accordingly.

Funds endowing this Lecture will be raised through tax-deductible donations to ASCE (non-profit Tax ID number 52-1891243). Donations equaling or exceeding \$100, \$500, \$1,000, \$2500 and \$5000 will be recognized as bronze, copper, silver, gold and platinum levels, respectively. Donors will be recognized on the G-I's web site and on the Annual Lecture Brochures. Donations should be made by personal or corporate check payable to: "ASCE - Monismith Lecture on Pavement Engineering", 1801 Alexander Bell Drive, Reston, VA 20191-4400.

For additional information on the Monismith Lecture, please contact: Tom Papagiannakis of the G-I Pavements Committee at: at.papagiannakis@utsa.edu or 210-332-0642 Rob Schweinfurth, the G-I Director at: rschweinfurth@asce.org or 703-295-6015). For more information, please log onto the Geo-Institute web-site at: <http://content.geoinstitute.org>.



Professor
Carl L. Monismith



UPCOMING EVENTS CALENDAR

JULY
2011



10th International Conference on Low-Volume Roads

July 24-27, 2011 in Lake Buena Vista, Florida, USA

<http://www.trb.org/conferences/2011/10LVR>

AUGUST
2011

PCA Professors' Workshop

August 1-5, 2011 at the PCA Headquarters in Skokie, Illinois

Caron Johnsen: cjohnsen@cement.org or call 847.972.9058



ASCP National Conference

August 2, 2011 at the Ryde-Eastwood Leagues Club in Sydney, New South Wales, Australia

<http://www.concretepavements.com.au/Documents/Brochure%20-%20preliminary.pdf>



ISCP Board of Directors' Meeting

August 3, 2011 at the Ryde-Eastwood Leagues Club in Sydney, New South Wales, Australia

<http://www.concretepavements.com.au/Documents/Brochure%20-%20preliminary.pdf>

7th International Conference on Road & Airfield Pavement Technology

August 3-5, 2011 in Bangkok, Thailand <http://www.icpt2011.org/>

2011 International Concrete Sustainability Conference

August 9-11, 2011, in Boston, Massachusetts, USA. Co-hosted by the Massachusetts Institute of Technology. <http://www.sustainabilityconf.org/> or contact Lionel Lemay, Lemay@nrmca.org

MnROAD Research Conference

August 16, 2011 in Twin Cities area, Minnesota, USA

SEPTEMBER
2011

24th World Road Congress

September 26-30, 2011 in Mexico City, Mexico

<http://www.aipcrmexico2011.org>

NOVEMBER
2011



2nd International Conference on Best Practices for Concrete Pavements

November 2-4, 2011 in Florianopolis, Santa Catarina State, Brazil

http://www.ibracon.org.br/eventos/2nd_pavement/informacoes.asp

8th International Conference on Managing Pavement Assets

November 15-19, 2011 in Santiago, Chile

<http://www.icmpa2011.cl/>

APRIL
2012

2nd International Conference on Microstructure Related Durability of Cementitious Composites

April 11-13, 2012 in Amsterdam, the Netherlands

<http://microdurability.tudelft.nl/>

International RILEM Symposium for Multiscale Characterization, Modeling and Simulation of Infrastructure Materials

April 19-20, 2012 in Stockholm, Sweden

<http://www.rilem.net/gene/main.php?base=600040>

JUNE
2012

International Congress on Durability of Concrete

June 18-21, 2012 in Trondheim, Norway

<http://www.icdc2012.com>

7th RILEM Conference on Cracking in Pavements

June 20-22, 2012 in Delft, the Netherlands

<http://www.rilem2012.org>

JULY
2012



10th International Conference on Concrete Pavements

Organized by ISCP

July 8-12, 2012 in Quebec City, Canada <http://www.concretepavements.org/10thiccp>

Please visit the ISCP calendar at: <http://www.concretepavements.org/calendar.htm>

International Society

ISCP

for Concrete Pavements

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Neeraj Buch, Chair secretary@concretepavements.org

ISCP thanks **Tim Smith**, **Todd Loesch**, **Sabrina R. Shields**, **Mary Vancura** and **Javier Castro**
for contributions to this issue and invites ISCP members and friends
to submit articles and calendar items to the Editor-in-Chief for future issues.

ISCP President: **Mark B. Snyder, Ph.D., P.E.** president@concretepavements.org

Vice-President: **José T. Balbo, Ph.D.** vice-president@concretepavements.org

Secretary/Treasurer **Neeraj Buch, Ph.D.** secretary-treasurer@concretepavements.org

Please visit the ISCP website at www.concretepavements.org for more information about ISCP.

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